ITCS 209 Object Oriented Programming	Name:	Lab	Challenge Bonus	Peer Bonus
	ID:			
	Sec:			

Lab09: Polymorephism

In this lab, you are provided with the four java files as follows:

- `Shape.java` - **DO NOT MODIFY THIS CLASS.**
- `Rectangle.java` – a subclass of `Shape`. **You have to complete this class**.
- `Triangle.java` – a subclass of `Shape`. **You have to complete this class**.
- `ShapeTester.java`: This is the main class. - **DO NOT MODIFY THIS CLASS.**

Task 1: complete `Rectangle.java`

- **Override** method `double getArea()` from `Shape.java` to compute and return area of a rectangle using **`area = width * length`**.

- **Override** method `String toString()` to return the following string :
  `"Rectangle[length=4, width=5, Shape[color=red]]"`

- **Overload** the method `double getArea (double width, double length)` then compute and return area of a rectangle.

Task 2: complete `Triangle.java`

- **Override** method `double getArea()` from `Shape.java` to compute and return area of a rectangle using **`area = 0.5*base * height`**.

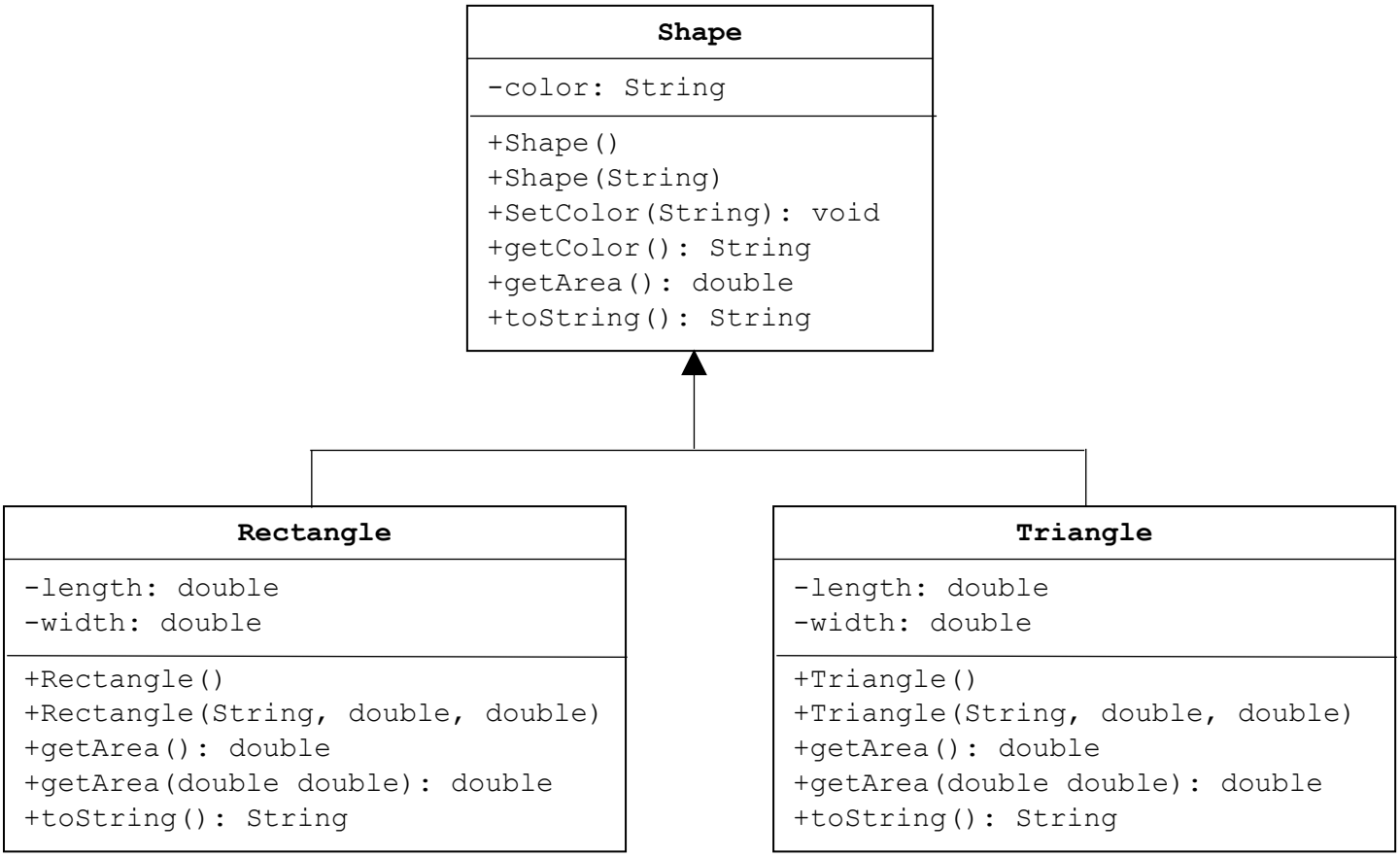
- **Override** method `String toString()` to return the following string :
  `"Triangle[base=4, height=5, Shape[color=blue]]"`

- **Overload** the method `double getArea (double base, double height)` then compute and return area of a rectangle.

Expected output

```
Rectangle[length=4.0,width=5.0,Shape[color=red]]
Area is 20.0
Triangle[base=4.0,height=5.0,Shape[color=blue]]
Area is 10.0
--Test superclass method--
Shape[color=blue]
Shape unknown! Cannot compute area!
Area is 0.0
--Test overload method--
Area is 50.0
Rectangle[length=5.0,width=10.0,Shape[color=green]]
--Test overload method--
Area is 25.0
Triangle[base=5.0,height=10.0,Shape[color=yellow]]
```

Note that: you can use the class diagram next page for more detail.



Challenge Bonus (Optional):

Create a new class representing any shapes you like that extends `Shape.java` such as circles, hexagons and so on. For the challenge, you are allow to modify ShapeTester.java to have **at least 2 objects of your class** and compute an area and print the output.